

In The Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-137. Cancelled

138. (Original) A platform comprising:

a microtome sectionable tissue support which is formed of material which can be successfully sectioned in a microtome, is resistant to histological stains, and is resistant to degradation from solvents and chemicals used to fix, process and stain tissue; and an embedding medium in which said tissue support is embedded.

139. (Original) A tissue sample container comprising:

a tissue support, said tissue support being formed of material which can be successfully sectioned in a microtome, resistant to histological stains, resistant to degradation from solvents and chemicals used to fix, process and stain tissue; and includes projections which engage and orient tissue during processing and embedding.

140. (Original) A biopsy tissue harvesting device which deposits a biopsy sample onto a tissue support directly from a harvesting device comprising:

a tissue support, said tissue support being formed of material which can be successfully sectioned in a microtome, resistant to histological stains, resistant to degradation from solvents and chemicals used to fix, process and stain tissue.

141. (Original) A histological tissue biopsy sample support comprising:

a frame; a tissue support releasably retained on said frame; said tissue support being formed of material which can be successfully sectioned in a microtome, resistant to histological stains, resistant to degradation from solvents and chemicals used to fix, process and stain tissue and is non-distracting during tissue processing and slide preparation; a microscopic examination sample support on said tissue support; and an embedding medium in which said tissue support is embedded.

142. (Original) A histologic tissue biopsy sample orientation device comprising:

supporting legs formed of microtome sectionable material;
normally closed tissue pinchers on said legs; and
pincher pincher openers on said legs.

143. (Original) A histologic tissue biopsy sample orientation device comprising:
supporting legs formed of microtome sectionable material;
normally open tissue pinchers on said legs; and
pincher pincher closers on said legs.

144. (Original) A platform comprising:
a microtome sectionable tissue support which is formed of material
which can be successfully sectioned in a microtome, resistant to histological stains,
resistant to degradation from solvents and chemicals used to fix, process and stain
tissue and is non-distracting during tissue processing and slide preparation.

145. (Original) A platform comprising:
a microtome sectionable tissue support which is formed of material
which can be successfully sectioned in a microtome, resistant to histological stains,
resistant to degradation from solvents and chemicals used to fix, process and stain
tissue and is non-distracting during tissue processing and slide preparation; and
includes projections which engage and orient tissue during processing and
embedding.

146. (Original) A platform comprising:

a tissue support which is microtome sectionable; and an embedding medium in which said tissue support is embedded, said embedding medium being formed of material that can be successfully sectioned in a microtome sectioning said tissue support embedded in said embedding medium.

147. (Previously Added) A histologic tissue sample support, said support configured to hold a tissue sample and being formed of a material which can be successfully sectioned in a microtome, said support further being resistant to degradation from solvents and chemicals used to fix and process the tissue sample during a histologic procedure.

148. (Previously Added) The histologic tissue sample support of claim 147, wherein said tissue sample support is embedded in a tissue embedding medium, said embedding medium being formed of material which can be successfully sectioned in a microtome.

149. (Previously Added) The histologic tissue sample support of claim 147, wherein said support further comprises:

a cassette having a bottom portion configured to hold the tissue sample, and a lid configured to couple with said bottom portion to hold the tissue sample in a desired orientation.

150. (Previously Added) The histologic tissue sample support of claim 149, wherein said bottom portion further comprises five sides, the five sides including a bottom wall and four side walls defining an interior space for holding the tissue sample, wherein the material can be successfully sectioned by slicing through said bottom wall to expose the tissue sample.

151. (Previously Added) The histologic tissue sample support of claim 149, wherein said lid is movably connected to said bottom portion.

152. (Previously Added) The histologic tissue sample support of claim 147, wherein said material forming said support is at least translucent so as to be non-distracting during tissue analysis.

153. (Previously Added) The histologic tissue sample support of claim 147, wherein said material is colored to provide a signal as to when to stop a facing operation thereof while sectioning said support in the microtome.

154. (Previously Added) The histologic tissue sample support of claim 147, further comprising:

projections on said support which engage and orient the tissue sample during processing, embedding and sectioning in the microtome.

155. (Previously Added) The histologic tissue sample support of claim 147, wherein said support is formed of a polymer.

156. (Previously Added) The histologic tissue sample support of claim 155, wherein said polymer is a fluorinated polymer.

157. (Previously Added) The histologic tissue sample support of claim 155, wherein said polymer is a fluoropolymer.

158. (Previously Added) The histologic tissue sample support of claim 147, wherein said support is porous.

159. (Previously Added) The histologic tissue sample support of claim 158, wherein said support includes side edges and elongated slots directed nonparallel to said side edges.

160. (Previously Added) The histologic tissue sample support of claim 147, further comprising:

tissue sample retaining structure configured to engage the tissue sample and maintain the sample in a desired orientation.

161. (Previously Added) The histologic tissue sample support of claim 147, further comprising:

tissue sample retaining structure configured to engage multiple tissue samples and maintain the multiple tissue samples in desired orientations whereby the multiple tissue samples all can be cut by a microtome in a single pass.

162. (Previously Added) The histologic tissue sample support of claim 147, wherein said support is non-distracting during tissue examination which is performed subsequent to slide preparation.

163. (Previously Added) The histologic tissue sample support of claim 147, wherein said support is resistant to histological stains.

164. (Previously Added) A histologic tissue sample support structure, comprising:

a support member configured to hold a tissue sample and being formed of a material which can be successfully sectioned in a microtome; and

a tissue embedding medium in which said support member is embedded, said embedding medium being formed of material which can be successfully sectioned in a microtome.

165. (Previously Added) A histologic tissue sample cassette, said cassette having a bottom portion configured to hold a tissue sample in a desired orientation and at least one side wall for containing the tissue sample, said cassette further being formed of a material which can be successfully sectioned in a microtome.

166. (Previously Added) The histologic tissue sample cassette of claim 165, further comprising:

a lid configured to couple with said bottom portion to further contain the tissue sample during an embedding process.

167. (Previously Added) Apparatus for holding a histologic tissue sample while sectioning the tissue sample in a microtome, the apparatus comprising:

a frame;

a tissue sample support coupled to said frame, said support configured to hold the tissue sample and being formed of a material which can be successfully sectioned in a microtome, said support further being resistant to degradation from

solvents and chemicals used to fix and process the tissue sample during a histologic procedure.

168. (Previously Added) The apparatus of claim 167, wherein said tissue sample support is releasably coupled to said frame and said frame is further configured for releasable securement within a microtome chuck.

169. (Previously Added) The apparatus of claim 167, wherein said frame includes an interior and said tissue sample support is sized to fit and move within said interior between at least a first position and a second position, said first position being used during processing of the tissue sample, and the second position being used to expose the tissue outward of said frame in a position for allowing the tissue sample to be sectioned in the microtome.

170. (Previously Added) The apparatus of claim 167, further comprising:

an embedding mold configured to releasably hold said frame and tissue sample support while embedding material is deposited within said embedding mold and frame to embed the tissue sample.

171. (Previously Added) The apparatus of claim 167, further comprising:

a tissue embedding medium in which said tissue sample support is embedded, said embedding medium being formed of material which can be successfully sectioned in a microtome.

172. (Previously Added) The apparatus of claim 167, wherein said support further comprises:

a cassette having a bottom portion configured to hold the tissue sample, and a lid configured to couple with said bottom portion to hold the tissue sample in a desired orientation.

173. (Previously Added) The apparatus of claim 172, wherein said bottom portion further comprises five sides, the five sides including a bottom wall and four side walls defining an interior space for holding the tissue sample, wherein the material can be successfully sectioned by slicing through said bottom wall to expose the tissue sample.

174. (Previously Added) The apparatus of claim 172, wherein said lid is movably connected to said bottom portion.

175. (Previously Added) The apparatus of claim 167, wherein said material forming said support is at least translucent so as to be non-distracting during tissue analysis.

176. (Previously Added) The apparatus of claim 167, further comprising:
projections on said support which engage and orient the tissue sample during processing, embedding and sectioning in the microtome.

177. (Previously Added) The apparatus of claim 167, wherein said support is formed of a polymer.

178. (Previously Added) The apparatus of claim 177, wherein said polymer is a fluorinated polymer.

179. (Previously Added) The apparatus of claim 177, wherein said polymer is a fluoropolymer.

180. (Previously Added) The apparatus of claim 167, wherein said support is porous.

181. (Previously Added) The apparatus of claim 180, wherein said support includes side edges and elongated slots directed nonparallel to said side edges.

182. (Previously Added) The apparatus of claim 167, further comprising:

tissue sample retaining structure configured to engage the tissue sample and maintain the sample in a desired orientation.

183. (Previously Added) The apparatus of claim 167, further comprising:

tissue sample retaining structure configured to engage multiple tissue samples and maintain the multiple tissue samples in desired orientations whereby the multiple tissue samples all can be cut by a microtome in a single pass.

184. (Previously Added) The apparatus of claim 167, wherein said support is non-distracting during tissue examination which is performed subsequent to slide preparation.

185. (Previously Added) The apparatus of claim 167, wherein said support is resistant to histological stains.

186. (Previously Added) The apparatus of claim 167, wherein said material is colored to provide a signal as to when to stop a facing operation thereof while sectioning said support in the microtome.

187. (Previously Added) A tissue sample container assembly comprising:

a histologic tissue sample support, said support being configured to hold a tissue sample and being formed of a material which can be successfully sectioned in a microtome, said support further being resistant to degradation from solvents and chemicals used to fix and process the tissue sample during a histologic procedure;

a container body with an opening for receiving said histologic tissue sample support; and

a cap configured to selectively open and close said opening.

188. (Previously Added) The tissue sample container assembly of claim 187, wherein said cap allows injection of the tissue sample into said container body.

189. (Previously Added) The tissue sample container assembly of claim 187, wherein said support further comprises:

a filter having a bottom portion configured to hold the tissue sample, and a lid configured to couple with said bottom portion to hold the tissue sample in a desired orientation.

190. (Previously Added) The tissue sample container assembly of claim 189, wherein said bottom portion further comprises five sides, the five sides including a bottom wall and four side walls defining an interior space for holding the tissue sample, wherein the material can be successfully sectioned by slicing through said bottom wall to expose the tissue sample.

191. (Previously Added) The tissue sample container assembly of claim 189, wherein said lid is movably connected to said bottom portion.

192. (Previously Added) The tissue sample container assembly of claim 187, wherein said material forming said support is at least translucent so as to be non-distracting during tissue analysis.

193. (Previously Added) The tissue sample container assembly of claim 187, further comprising:

projections on said support which engage and orient the tissue sample during processing, embedding and sectioning in the microtome.

194. (Previously Added) The tissue sample container assembly of claim 187, wherein said support is formed of a polymer.

195. (Previously Added) The tissue sample container assembly of claim 194, wherein said polymer is a fluorinated polymer.

196. (Previously Added) The tissue sample container assembly of claim 194, wherein said polymer is a fluoropolymer.

197. (Previously Added) The tissue sample container assembly of claim 187, wherein said support is porous.

198. (Previously Added) The tissue sample container assembly of claim 197, wherein said support includes side edges and elongated slots directed nonparallel to said side edges.

199. (Previously Added) The tissue sample container assembly of claim 187, wherein said material is colored to provide a signal as to when to stop a facing operation thereof while sectioning said support in the microtome.

200. (Previously Added) The tissue sample container assembly of claim 187,
further comprising:

tissue sample retaining structure configured to engage the tissue
sample and maintain the sample in a desired orientation.

201. (Previously Added) The tissue sample container assembly of claim 187,
further comprising:

tissue sample retaining structure configured to engage multiple tissue
samples and maintain the multiple tissue samples in desired orientations whereby
the multiple tissue samples all can be cut by a microtome in a single pass.

202. (Previously Added) The tissue sample container assembly of claim 187,
wherein said support is non-distracting during tissue examination which is
performed subsequent to slide preparation.

203. (Previously Added) The tissue sample container assembly of claim 187,
wherein said support is resistant to histological stains.

204. (Previously Added) A method for preparing one or more biopsy tissue samples
for histological examination, comprising:

placing a tissue sample on a microtome sectionable support;

immobilizing the tissue sample on the support;

subjecting the microtome sectionable support and the tissue sample to a process for replacing fluid in the tissue sample with a hardenable material;

embedding the microtome sectionable support and the tissue sample in an additional quantity of the hardenable material;

curing the hardenable material into a block; and

slicing the block with a microtome into thin slices of the hardenable material, the microtome sectionable support, and the tissue sample.

205. (Previously Added) The method of claim 204, wherein the embedding material is wax.

206. (Previously Added) The method of claim 204, wherein the microtome sectionable support further comprises a bottom portion configured to hold the tissue sample and a lid, and the step of immobilizing the tissue sample further comprises:

closing the lid on top of the tissue sample to trap the tissue sample in a desired orientation.

207. (Previously Added) The method of claim 204, wherein the microtome sectionable support is coupled to a frame prior to being subjected to the process

for replacing fluid in the tissue sample with the hardenable material, and the method further comprises securing the frame in the microtome prior to slicing the block.

208. (Previously Added) The method of claim 207, wherein prior to embedding the microtome sectionable support and the tissue sample in the additional quantity of the hardenable material, the microtome sectionable support is moved from a first position within the frame to a second position in which the support and tissue sample are exposed for sectioning in the microtome.

209. (Previously Added) The method of claim 208, wherein the frame is configured to be manipulated by an automated machine, and further comprising:

using the automated machine to move the frame and the support from the first position to the second position.

210. (Previously Added) The method of claim 204, wherein the microtome sectionable support is configured to be manipulated by an automated machine, and further comprising:

using the automated machine to perform the embedding step.

211. (Previously Added) The method of claim 204, wherein the microtome sectionable support is configured to be manipulated by an automated machine, and further comprising:

using the automated machine to perform the curing step.

212. (Previously Added) The method of claim 204, wherein the microtome sectionable support is configured to be manipulated by an automated machine, and further comprising:

automatically loading the support with the automated machine into a position for performing the embedding and curing steps; and

automatically unloading the support with the automated machine from the position for performing the embedding and curing steps upon completion of the embedding and curing steps.

213. (Previously Added) An automated machine for preparing one or more tissue samples in a microtome sectionable support, comprising:

a loading device operating to place the microtome sectionable support into a position;

a dispensing device operating to dispense an embedding material onto both the microtome sectionable support and at least one tissue sample carried by the support; and

an unloading device operating to remove the microtome sectionable support after embedding of the tissue sample.

214. (Previously Added) The automated machine of claim 213, further comprising:

a cooling device operative at said position for cooling and hardening the embedding material dispensed onto both the microtome sectionable support and the tissue sample.

215. (Previously Added) The automated machine of claim 213, wherein the microtome sectionable support is received within a frame and is movable between a first position within the frame and a second position in which the embedded tissue sample is exposed for sectioning in a microtome, and the automated machine further comprises:

a setting head operative to move the support from the first position to the second position.

216. (New) A method for preparing a tissue sample for analysis, comprising:

orienting the tissue sample in a desired orientation;

immobilizing the oriented tissue sample in a support structure having a

porous top, porous bottom and porous sides surrounding the oriented tissue sample; and

processing the immobilized tissue sample with tissue processing fluid by allowing the tissue processing fluid to flow through the porous top, porous bottom and porous sides into the tissue sample.

217. (New) The method of claim 216, wherein immobilizing the oriented tissue sample further comprises immobilizing the oriented tissue sample between the porous bottom and an opposing porous member.

 218. (New) The method of claim 216, further comprising:

sectioning the tissue sample and the support structure with the tissue sample in the desired orientation following processing.

219. (New) A method for preparing a tissue sample for analysis, comprising:

orienting the tissue sample in a desired orientation relative to a porous support;

immobilizing the oriented tissue sample on the porous support using an immobilization media; and

processing the immobilized tissue sample with tissue processing fluid by allowing the tissue processing fluid to flow through the porous support into the tissue sample.

220. (New) The method of claim 219, wherein the immobilization media further comprises a glue-like substance on at least one of the tissue sample and the porous support.

221. (New) The method of claim 219, wherein the immobilization media further comprises agar.

222. (New) A method for preparing a tissue sample for analysis, comprising:

orienting the tissue sample in a desired orientation;

immobilizing the oriented tissue sample on a porous support structure;

processing the immobilized tissue sample with tissue processing fluid

by allowing the tissue processing fluid to flow through the porous support structure into the tissue sample; and

sectioning the tissue sample and the support structure with the tissue sample in the desired orientation following processing.

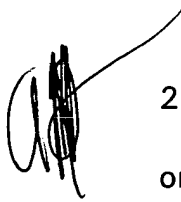
223. (New) A cassette for receiving and retaining a tissue sample for processing prior to histological examination, comprising:

a top portion and a bottom portion snap or friction mounted together,

the bottom portion having a bottom wall and a side wall each being removable after a procedure is performed to embed the tissue sample in said bottom portion.

224. (New) The cassette of claim 223, wherein said bottom wall and said side wall are removable by sectioning in a microtome while sectioning said cassette and tissue sample after embedding said cassette and tissue sample in an embedding media.

225. (New) The cassette of claim 223, wherein said top and bottom portions are molded of a synthetic plastic material.



226. (New) A cassette for receiving and retaining a tissue sample in a desired orientation for processing and microtoming procedures prior to histological examination, comprising:

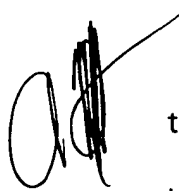
a support structure having a porous top, porous bottom and porous sides configured to surround and fix the tissue sample in the desired orientation during the processing and microtoming procedures prior to histological examination.

227. (New) The cassette of claim 226, wherein said porous bottom and said porous sides are removable after a procedure is performed to embed the tissue sample in said support structure.

228. (New) The cassette of claim 226, wherein said porous bottom and said porous sides are removable by sectioning in a microtome during the microtome procedure.

229. (New) The cassette of claim 226, wherein said support structure is molded of a synthetic plastic material.

230. (New) A method for embedding and sectioning a tissue sample comprising:



(a) positioning the tissue sample above a planar, perforated element that is positioned on and forms a portion of an embedding support structure that has all portions of the planar, perforated element lying below the tissue sample, said planar perforated element defining a reference plane with respect to the tissue sample;

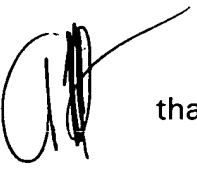
(b) embedding the tissue sample and at least a portion of said support structure in an embedding medium to form an integral embedded unit with the tissue sample remaining above the planar, perforated element; and,

(c) sectioning the integral embedded unit in at least one plane that passes through the embedded tissue sample and is in registered relationship to said reference plane.

231. (New) The method of claim 230, wherein said tissue sample is positioned on top of and in physical contact with said planar, perforated element.

232. (New) The method of claim 230, wherein said tissue sample is positioned on top of, but not in physical contact with said planar, perforated element.

233. (New) A method for embedding and sectioning a tissue sample for microtome sectioning comprising:



(a) positioning the tissue sample above a planar, perforated element that is positioned on and forms a portion of support structure that has all portions thereof lying below the tissue sample, said planar perforated element defining a reference plane with respect to the tissue sample;

(b) embedding the tissue sample and at least a portion of the support structure in an embedding medium to form an integral embedded unit with the tissue sample remaining above the planar, perforated element;

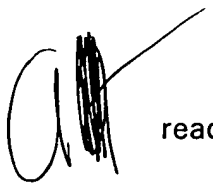
(c) mounting the integral embedded unit on a microtome with the reference plane parallel to a cutting plane of the microtome; and,

(d) sectioning the embedded tissue sample with the microtome.

234. (New) The method of claim 233, wherein said tissue sample is positioned on top of and in physical contact with said planar, perforated element.

235. (New) The method of claim 233, wherein positioning the tissue sample above a planar, perforated element further comprises positioning the tissue sample on an immobilization media.

236. (New) A method of automating a tissue sample processing and embedding procedure performed prior to histological examination, comprising:

 providing at least one tissue sample support member having a machine readable portion,

electronically reading tracking information related to the tissue sample from the machine readable portion, and

storing the tracking information in a computer readable form.

237. (New) The method of claim 236, wherein the tracking information further comprises a tracking number.

238. (New) The method of claim 236, further comprising:

storing an electronic image of the tissue sample in a computer readable form.

239. (New) The method of claim 238, wherein the electronic image further comprises a digital picture.